What is claimed is:

1. A system comprising:

a plurality of subdural electrodes formed as a grid;

a cortical stimulator for stimulating individual pairs of the plurality of subdural electrodes; and

an electromyograph for detecting reaction to the stimulating.

2. A system comprising:

a plurality of subdural electrodes formed as a grid;

a cortical stimulator for stimulating individual pairs of the plurality of subdural electrodes;

an electromyograph for detecting reaction to the stimulating; and

a controller structured for associating the reaction with one of the individual pairs of the plurality of subdural electrodes.

3. The system of claim 2 wherein the electromyograph includes a plurality of sensors adapted to monitor electrical activities of a corresponding plurality of muscle areas.

4. The system of claim 3 wherein the controller is further structured for presenting a map that matches at least one of the individual pairs of subdural electrodes respectively to at least one of the plurality of sensors.

5. The system of claim 3 wherein the controller is operative to minimize individual voltages being applied by the stimulating to the individual pairs of subdural electrodes according to at least one algorithm that pragmatically increases ones of the individual voltages within a predetermined voltage range.

6. The system of claim 5 wherein the plurality of sensors are each associated with a respective starting voltage used by the at least one algorithm.

7. The system of claim 5 wherein the at least one algorithm calculates a stimulus voltage to be applied by an individual one of the plurality of subdural electrodes based on a best guess of a threshold response voltage for the type of muscle expected to be stimulated by the one subdural electrode.

8. The system of claim 2 wherein the controller is structured for causing the cortical stimulator to stimulate the individual pairs of the plurality of subdural electrodes in a stimulation pattern.

9. The system of claim 8 wherein the stimulation pattern includes a sequence of individual passes, each pass including a sequence of applying stimuli to the individual pairs, the sequence of applying stimuli including pairing individual ones of the plurality of subdural electrodes according to a predetermined pairing pattern.

10. The system of claim 9 wherein the pairing pattern includes, for each electrode, pairing the electrode with each adjacent electrode of the grid.

11. The system of claim 9 wherein the pairing pattern is based on a stimulation minimization algorithm.

12. The system of claim 11 wherein the stimulation minimization algorithm is based on prior verification of mapping data for at least one of the plurality of subdural electrodes, and eliminating verified electrodes from the pairing pattern.

13. The system of claim 2 wherein the grid is formed as a three-dimensional array.

14. The system of claim 2 wherein the controller is further structured for creating a stimulation threshold profile for a patient, the profile including a chart of individual stimulation voltages for a plurality of stimulation points, the stimulation voltages each being a minimum voltage for evoking a particular muscle response.

15. The system of claim 8 wherein the controller includes an expert system for modifying the stimulation pattern.

16. The system of claim 3 wherein the plurality of sensors comprise at least one of monopolar, bipolar, and tripolar probes.

17. A method comprising:

providing a plurality of subdural electrodes formed as a grid;

electrically stimulating individual pairs of the plurality of subdural electrodes;

detecting an electromyographic reaction to the stimulating; and

associating the reaction with one of the individual pairs of the plurality of subdural electrodes.

18. The method of claim 17 wherein the detecting includes monitoring electrical activities of a plurality of muscles using a corresponding plurality of sensors.

19. The method of claim 18 further comprising mapping a stimulated location to one of the plurality of muscles according to a mapping function.

20. The method of claim 17 further comprising creating a stimulation threshold profile for a patient, the profile including a chart of individual stimulation voltages for a plurality of stimulation points, the stimulation voltages each being a minimum voltage required to evoke a particular muscle response.

21. The method of claim 17 wherein the stimulating is performed in at least one pattern of sequential applications of voltage to the individual pairs of the subdural electrodes.

22. The method of claim 21 further comprising modifying the pattern with an expert system.

23. The method of claim 21 wherein individual voltages being applied to the individual pairs are minimized according to at least one algorithm that pragmatically increases ones of the individual voltages within a predetermined voltage range.

24. The method of claim 23 wherein the plurality of sensors are each associated with a respective starting voltage used by the at least one algorithm.

25. The method of claim 23 wherein the at least one algorithm calculates a stimulus voltage to be applied by an individual pair of the plurality of subdural electrodes based on a best guess of a threshold response voltage for the type of muscle expected to be stimulated by the subdural electrode pair.

26. The method of claim 19 wherein the plurality of muscles are grouped into a plurality of regions, and wherein, for mapping one of the regions, part of the plurality of subdural electrodes are eliminated from a stimulating pattern.

27. The method of claim 21 wherein the stimulating includes applying a first voltage to a first one of the pairs and then applying a second voltage to a second one of the pairs, wherein the first voltage is different from the second voltage.

28. The method of claim 27 wherein the first and second voltages are pulse trains.

29. The method of claim 21 wherein the polarity of a voltage being applied to one of the pairs of electrodes is reversed for successive stimulations of the one pair.

30. The method of claim 17 wherein the stimulating of individual pairs includes, for each one of the plurality of electrodes, all pairs of electrodes that include the one electrode within a predetermined electrode-distance of the one electrode.

31. The method of claim 21 wherein if a reaction event is associated with one of the pairs of electrodes during the stimulating, the one pair is eliminated from a subsequent pairing pattern of a mapping session.

32. The method of claim 21 wherein the pattern includes a sequence of individual stimulation passes, each stimulation pass including a sequence of applying stimuli to the individual pairs, the sequence of applying stimuli including pairing individual ones of the plurality of subdural electrodes according to a predetermined pairing pattern.

33. The method of claim 32 wherein the pairing pattern is based on prior verifying of mapping data for at least one of the plurality of subdural electrodes, and elimination of verified electrodes from the pairing pattern.

34. The method of claim 21 wherein the stimulating is performed in three dimensions.

35. The method of claim 19 wherein the mapping includes presenting a map.

36. The method of claim 35 further comprising comparing the map with a predetermined map and determining at least one dimensional offset therefrom for determining a shifted position of the grid.

37. The method of claim 35 further comprising guiding a resectioning of a cortex based on the map.

38. The method of claim 35 wherein the mapping includes reading a data set, the data set defining a series of electromyograph detection scans, and displaying a relationship between the data set and a scaled graphical image.

39. The method of claim 17 further comprising mapping a set of stimulated locations to corresponding ones of the plurality of muscles according to a mapping function, wherein the mapping includes reading a data set, the data set defining a series of electromyograph detection scans, and displaying a relationship between the data set and a stored map profile of a cortex.

40. The method of claim 17 wherein the stimulating includes applying electricity to individual sets of the subdural electrodes in a predetermined pattern.

41. A method comprising utilizing subdural electrodes as selectable stimulus points in a closed loop system of cortical mapping based on electromyographic detection events.

42. Apparatus for intraoperatively localizing functional areas of the brain comprising:

means for stimulating a portion of a cortex;

means for detecting a reaction to the stimulating; and

means for associating the detecting with the stimulating.